

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2004/002884

International filing date (day/month/year)  
02.07.2004

Priority date (day/month/year)  
18.07.2003

International Patent Classification (IPC) or both national classification and IPC  
C09B47/26, C09B47/06, C09D11/00

Applicant  
AVECIA LIMITED

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	6,12
	No: Claims	1-5,7-11,13-16
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

**see separate sheet**

Reference is made to the following documents:

D1: WO -A- 99/67334  
D2: WO -A- 2004/035701  
D3: US -A- 4 732 615  
D4: WO -A- 2004/035700  
D5: US -A- 4 632 703

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-5,7-11,13-16 is not new in the sense of Article 33(2) PCT.

1.1. D1 discloses (see D1, examples 1,2) copper phthalocyanine compounds with SO<sub>3</sub>H, SO<sub>2</sub>-NH<sub>2</sub> and NH(C<sub>2</sub>H<sub>4</sub>OH) resp. N(C<sub>2</sub>H<sub>4</sub>OH)<sub>2</sub> substituents linked at the outer rings. Thereby, in D1 is mentioned, that ".....Substituents may replace any H attached to an atom in the ring (e. g. Pc nucleus).....", and ".....Preferably the substituents on the Pc nucleus are positioned so that none of its phenyl moieties have more than one substituent.....". It is most likely, that, beneath the pure alpha and the mixed alpha/beta-substitution pattern also the pure beta-substituted product is obtained by these compounds of examples 1,2 of D1.

As stated by the applicant on description page 1 of his application, the dyes of D1 are "randomly substituted", under which skilled person understands the presence of alpha, alpha/beta and beta compounds. Furthermore, on page 2 is stated, that ".....Details of the usual route for forming a dye of Formula (1) may be found in WO99/67334, Example 1, which is incorporated herein by reference....."; the products of D1 seem therefore at least partially bear the pure beta substituted phthalocyanine products. D1 therefore is considered being novelty destroying for the claims 1-5,7-11,13-16. Experimental datas, which clearly show, that the pure alpha resp. the mixed alpha/beta products are obtained by the process of examples 1 and 2 of D1, could prove novelty of current claims 1,10 over D1.

1.2. D2/D4 (published on 29.04.2004) have an older priority as the claimed priority of the current application and could be of relevance in case of entering the regional phase before the European Patent Office.

1.3. The dyes resp. compositions presented in the examples of D3 take away novelty of the claims 1,3,5,7-10,13-16. Thereby a group -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OR<sub>1</sub> is considered being an optionally substituted C1-4alkyl.

1.4. D5 (compounds of number: ) is novelty destroying for claims 1-5,7-11,13-16.

1.5. Regarding the position of the substituents at the phthalocyanine nucleus, it is assumed that the products prepared in the examples of the disclosed prior art, also cover the pure beta-substituted phthalocyanines; therefore, documents, which are silent with respect to the substitution pattern, are considered being implicitly novelty destroying in case all other technical features of the affected claims are met.

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 6,12 does not involve an inventive step in the sense of Article 33(3) PCT.

The problem underlying the current application can be formulated as 'providing cyan shaded metal phthalocyanine dyes for ink jet printing with good overall properties'.

2.1. The feature of  $x$  being less than 1 (claims 6,12) is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.